

KAMARAJ COLLEGE (Autonomous)

Accredited with A+ Grade by NAAC

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages)

Reg. No:.....

Question Code: 26E01613

Course Code : 24PMMB41

PG Degree - End Semester Examinations, April 2026

Fourth Semester

M.Sc., MICROBIOLOGY

Food and Dairy Microbiology

(For those who joined in July 2024 onwards)

Time : 3Hours

Maximum : 75 Marks

PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

- CO:1 1. Which of the following is an intrinsic factor affecting microbial
K:1 growth in food?
- (a) Storage Temperature (b) Relative Humidity
(c) pH level (d) Atmospheric gases
- CO:1 2. The primary microorganism responsible for the fermentation of
K:2 Idli batter is
- (a) *Lactobacillus* (b) *Leuconostoc mesenteroides*
(c) *Saccharomyces* (d) *Bacillus subtilis*
- CO:2 3. Which method of pasteurization involves heating milk to 72⁰ C
K:1 for 15 seconds?
- (a) LTLT (b) HTST
(c) UHT (d) Blanching
- CO:3 4. "Flat sour" spoilage in canned foods is typically caused by:
K:2
- (a) *Clostridium* (b) Targeted *Bacillus* species
(c) *Pseudomonas* (d) *Rhizopus*
- CO:2 5. HACCP is a system primarily focused on:
K:2
- (a) Final product testing (b) Prevention of hazards
(c) Marketing (d) Employee payroll

- CO:3 K:1 6. In India, the primary authority for consolidating food laws and standards is:
- (a) BIS (b) FDA
(c) FSSAI (d) AGMARK
- CO:4 K:2 7. Which fermented milk product is made using "grains" that consist of a symbiotic colony of bacteria and yeast?
- (a) Yogurt (b) Kefir
(c) Acidophilus milk (d) Sour cream
- CO:4 K:2 8. The starter culture used specifically for Yogurt production includes:
- (a) *L. acidophilus* (b) *S. thermophilus*
(c) *L. lactis* (d) *P. roqueforti*
- CO:5 K:2 9. Which milk-borne pathogen is the reason for the specific time/temperature requirements of pasteurization?
- (a) *Salmonella* (b) *Coxiella burnetii*
(c) *E. coli* (d) *Brucella*
- CO:5 K:2 10. Foot and Mouth Disease (FMD) is classified as a:
- (a) Bacterial disease (b) Viral disease
(c) Fungal disease (d) Protozoan disease

PART - B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

- CO:1 K:3 11. (a) Discuss the scope of Food Microbiology in the modern food industry.

(OR)

- (b) Give a general view of Indian traditional fermented cereal-based foods.

- CO:2 K:4 12. (a) Explain the principles of food preservation by means of radiation.

(OR)

(b) Describe the common signs and causes of spoilage in poultry.

CO:3 13. (a) Outline the common food additives and their functions in
K:4 food processing.

(OR)

(b) Describe the role of BIS (IS) in maintaining food quality standards.

CO:4 14. (a) Elucidate the production process and health benefits of
K:4 acidophilus milk.

(OR)

(b) Explain the differences between the production of butter milk and sour cream.

CO:5 15. (a) Describe the symptoms and transmission of milk borne
K:3 disease - tuberculosis.

(OR)

(b) Discuss the impact of mastitis on the microbiological quality of milk.

PART - C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 600 words.

CO:1 16. (a) Elaborate on the intrinsic and extrinsic factors that affect
K:3 the growth of microorganisms in food.

(OR)

(b) Classify the important microorganisms found in food and their significance.

CO:2 17. (a) Discuss in detail the high-temperature preservation
K:4 methods with special reference to pasteurization and canning.

(OR)

(b) Explain the contamination and spoilage patterns of milk and milk products.

CO:3 18. (a) Explain the seven principles of HACCP and its importance in
K:5 food safety management.

(OR)

(b) Discuss the FSSAI-2014 regulations and the legal implications of food adulteration in India.

CO:4 19. (a) Provide a detailed account of the microbiology and manufacturing process of different types of cheese.
K:4

(OR)

(b) Compare and contrast the fermented dairy products Kefir and Koumiss.

CO:5 20. (a) Discuss the major milk-borne bacterial diseases.
K:6

(OR)

(b) Elaborate on fungal contamination of milk with special reference to Aspergillosis and Microsporam.